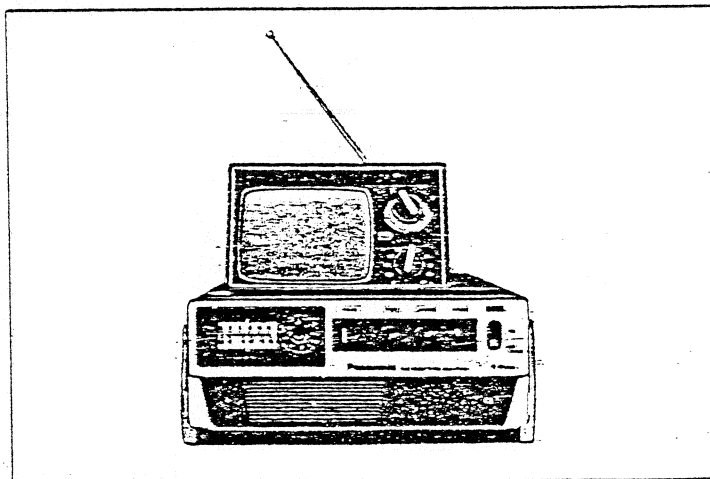


Service Manual

Black and White Television
TR-535/TR-535C

Chassis No. T506-A Main Manual



Specifications

Power Source:	AC: 120V 60Hz	DC: 12V	IC:	5
Power Consumption:	AC: 20W	DC: 6W	Picture Tube:	Type 140AKB4
Antenna:	UHF/VHF Monopole antenna			13 square inches
	75 Ohm Unbalanced type.			55° Deflection.
	VHF and UHF External antenna		Speaker:	3-1/2" Round type
	300 Ohm Balanced type		Audio Output:	Max. 360mW
Receiving Channels: TV	VHF 2ch-13ch USA Standard		Automatic Controls:	Keyed AGC
	UHF 14ch-83ch - USA Standard			(Automatic Gain Control)
Radio	FM 88 ~ 106 MHz			Saw-Tooth AFC
	AM530 ~ 1650 MHz			(Automatic Frequency Control)
Intermediate				AVR (Automatic Voltage Regulator)
Frequency:	Video: 45.75 MHz			ACP (Automatic Charge Protector)
	Sound: 41.25 MHz			ADP (Automatic Discharge
Stages:	Video: I-F: 3			Protector)
	Sound: I-F: 1(IC)		Dimensions:	Height: 5-1/2 inches
Transistors:	25			Weidth: 12-1/2 inches
Diodes:	21			Depth: 14 inches
High Voltage:	7.2 kV (Brightness &		Weight:	15-1/5 lbs
	Contrast are MIN)			With Panaloid Batteries

Panasonic®

Matsushita Electric Corp. of America
50 Meadowland Parkway Secaucus,
New Jersey 07094
Matsushita Electric of Hawaii, Inc.
320 Waiakamilo Road, Honolulu, Hawaii 96817

Matsushita Electric of Canada Ltd.
40 Ronson Drive, Rexdale, Ont.

ORDER NO. 7505-007

CAUTION

The high voltage supply at the picture tube anode will give an unpleasant shock, but does not supply enough current to give a fatal burn or shock. However, secondary human reaction to otherwise harmless shocks have been known to cause injury. Always discharge the picture tube anode to the receiver chassis before handling the tube. Certain portions of the high voltage generating circuit are dangerous and extreme caution should be observed. The picture tube is highly evacuated and, if broken, glass fragments will be violently expelled.

WHEN HANDLING THE PICTURE TUBE, ALWAYS WEAR GOGGLES AND PROTECTIVE CLOTHING.

CONTROL LOCATION

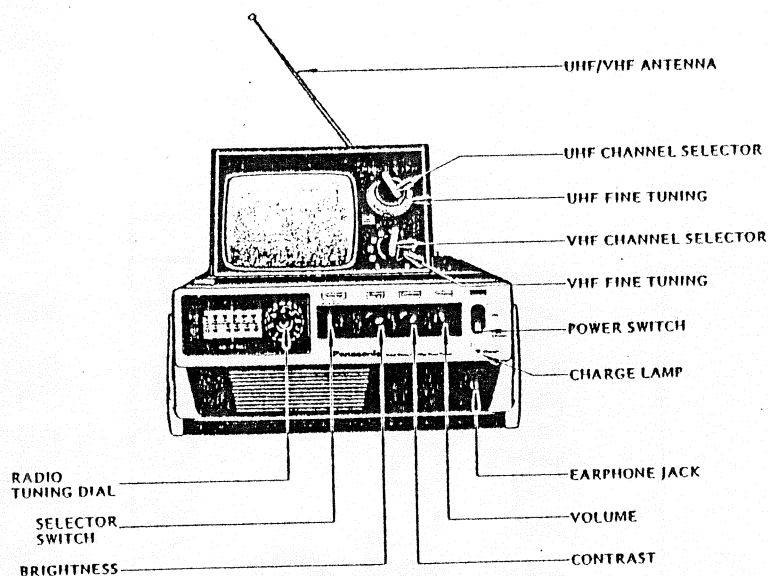


Fig. 1

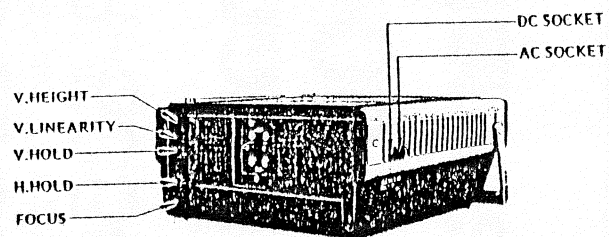


Fig. 2

ADJUSTMENTS

VERTICAL HEIGHT AND VERTICAL LINEARITY (Fig. 2)

- (1) These controls (VR32 and VR33) should be adjusted at the same time to give proper vertical size consistent good vertical linearity. The adjustment should be made to extend the picture limits approximately $3/16"$ beyond the top and bottom edges of the mask.

AGC (AUTOMATIC GAIN CONTROL)

The adjustment of the AGC control effectively changes the operating point of the AGC amplifier. Turn the control fully clockwise to set for maximum gain. In some areas this may cause clipping of the sync pulses, resulting wiggle in the picture and unstable sync. Turning the AGC control in a counterclockwise direction will decrease the of the receiver and diminish the wiggle.

TO ADJUST THE AGC PROPERLY (Fig. 3)

- (1) Set the channel selector to a station transmitting a strong signal.
- (2) Set the R-F AGC control VR 19 to the center position.
- (3) Turn the I-F AGC control VR 18 fully counterclockwise, and the contrast and brightness controls fully clockwise.
- (4) Adjust the I-F AGC control VR 18 to obtain a sharp and clear picture. If I-F AGC control VR 18 is turned 1 clockwise, the input signal strength will be maximum.
- (5) Observing the input signal, turn the R-F AGC control VR 19 clockwise or counterclockwise to the point where snow noise disappears in the picture.
- (6) Check the reception on all channels. There should be no wiggling. Make certain the picture does not disappear when the contrast control is turned to minimum.
- (7) Readjust AGC control slightly, if necessary. In very strong signal areas, where slight sync clipping is still evident shorten antenna length or use a pad with an outside antenna to reduce signal input.

YOKE POSITION (Fig. 5)

The yoke is secured to the neck of the picture tube with an angular clamp and screw. To adjust the yoke and correct picture tilt, loosen this clamp. Correct tilt and retighten the screw.

CENTERING (Fig. 5)

The picture centering device consists of two rings located at the rear of the yoke assembly. Each ring has a tab for adjustment. The tabs should be rotated and moved towards or away from each other until the picture is properly centered on the screen of the picture tube.

FOCUS (Fig. 2)

Adjust the focus control (VR64) for the sharpest and clearest picture.

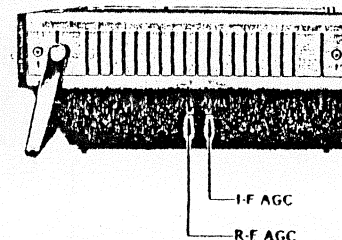


Fig. 3

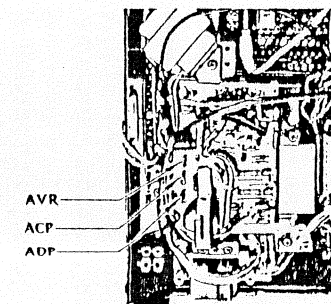


Fig. 4

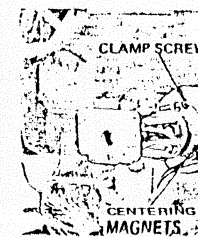


Fig. 5

DISASSEMBLY INSTRUCTIONS

Upper Cabinet Removal

1. Remove 5 mounting screws (A) shown in Fig. 6 and Fig. 7.

POP-UP Block Removal

1. Remove the upper cabinet.
2. Remove 4 screws (B) shown in Fig. 8.
3. Picture Tube: Remove 4 screws (C) shown in Fig. 9.
4. Tuner Block: Remove 3 screws (D) shown in Fig. 9.

Radio Block Removal

1. Remove the upper cabinet, 3 connectors and the picture tube Barrier as shown in Fig. 10.
2. Pull off the selector switch knob and the radio tuning dial.
3. Remove 2 screws (E) shown in Fig. 12.

Volume Block Removal

1. Remove the upper cabinet and the radio block.
2. Remove 2 screws (F) shown in Fig. 11.

Speaker and Power switch Removal

1. Remove the upper cabinet and the volume block.
2. Remove 2 screws (G) shown in Fig. 12.

Main Circuit Board Removal

1. Remove the upper cabinet.
2. Pull off the V.Hold knob and H.Hold knob.
3. Remove a screw (H) shown in Fig. 11.
4. Pull the main circuit board upward.

Power Circuit Board Removal

1. Remove the upper cabinet and the PUP-UP block.
2. Remove a screws (I) and 4 screws (J) shown in Fig. 13 and Fig. 11

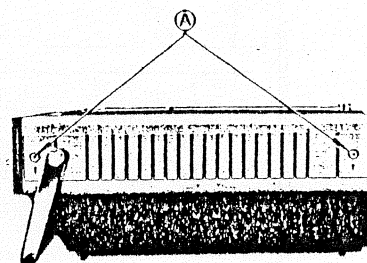


Fig. 6

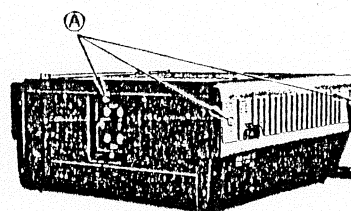


Fig. 7

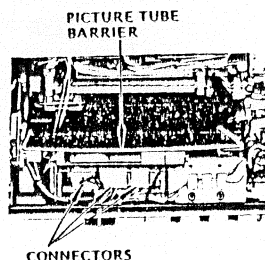


Fig. 10

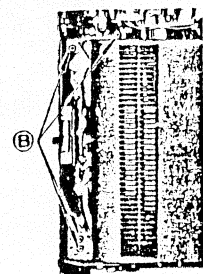


Fig. 8

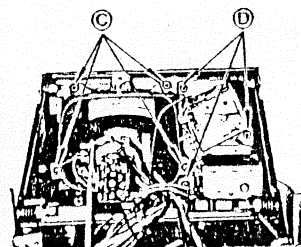


Fig. 9

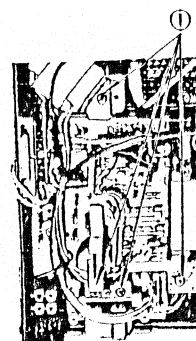
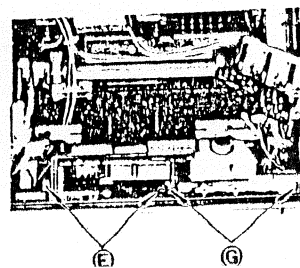
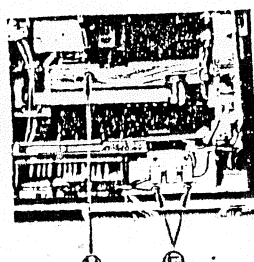


Fig. 13

VIDEO I-F ALIGNMENT

PREPARATION

1. Sweep & marker generator, oscilloscope and DC power supply Connect and set as shown in Fig. 1
2. Connect the jumper lead between TP14 and TP15 as shown in Fig. 14

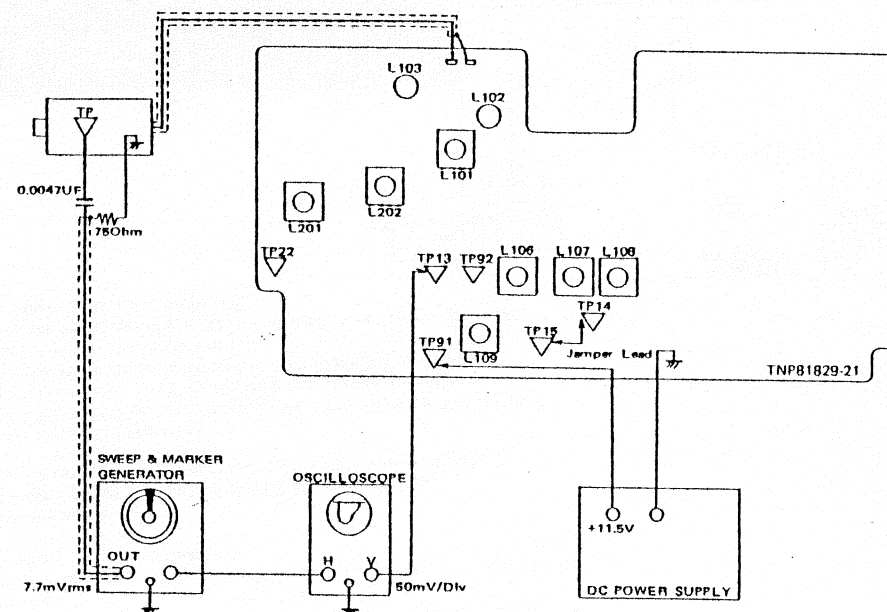


Fig. 14

ALIGNMENT PROCEDURE

STEP	ALIGNMENT	WAVEFORM
1	Adjust L103 for the 41.25MHz marker position to fall shown in Fig. 15.	
2	Adjust L102 for the 47.25MHz marker position to fall shown in Fig. 15.	
3	Adjust both L101 and tuner converter coil to obtain the correct response curve shown in Fig. 15.	

Fig. 15

SOUND I-F ALIGNMENT

PREPARATION

1. Set the power switch to "ON" position.
2. Turn the volume fully counterclockwise.
3. Sweep & Marker generator and oscilloscope...connect and set shown in Fig.16.
4. Connect the jumper lead between S2 and TP23 as shown in Fig.16.

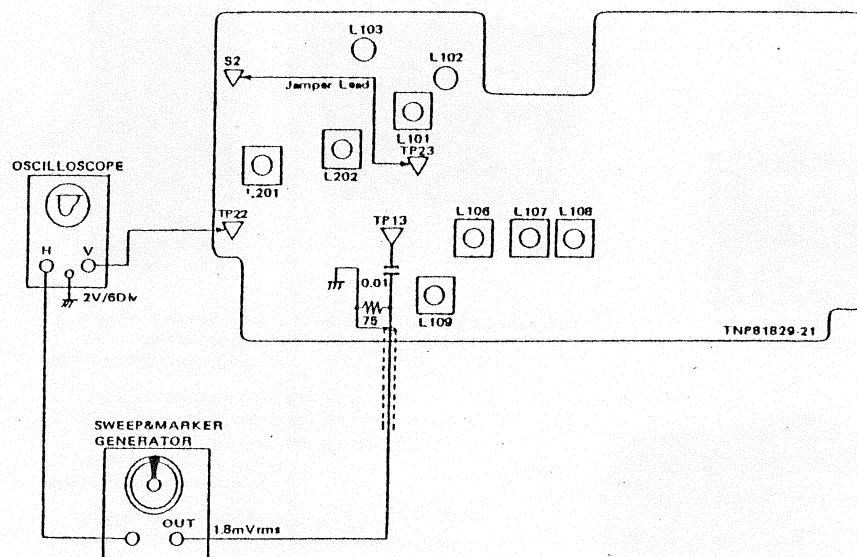


Fig.16

ALIGNMENT PROCEDURE

STEP	ALIGNMENT	WAVEFORM
1	Adjust L202 to get the V curve shown in Fig.17 and adjust L201 to the maximum gain at 4.5MHz shown in Fig.17.	
2	Adjust L202 until the 4.5MHz marker is the center of slanted line shown in Fig.18.	

AVR, ACP, ADP ADJUSTMENT

CONNECTIONS

Connect as shown in Fig. 19.

PREPARATION

1. Turn the VR71 fully counterclockwise.
2. Turn the VR72 and VR73 fully clockwise.

A. ACP circuit alignment procedure

1. Set the SW-1 and the SW-2 to ON position, and set the SW701 and the SW702 to OFF position.
2. Adjust the DC power supply voltage indicating V1 meter to the value which it indicates Fig.20 (Be sure to check the temperature. The voltage is changed by the temperature.)
3. Turn the VR72 clockwise and set the point where the charge lamp has started illuminating.
4. Confirm the operating voltage of ADP circuit shown in Fig.20 by rising the DC power supply voltage and dropping it.

B. AVR adjustment procedure

1. Set the SW-1 to ON position and the SW-2 to OFF position.
2. Set the V1 voltage to 11.5V by adjusting the AVR control VR71.

C. ADP circuit adjustment procedure

1. Set the SW-1 to OFF and set the SW-2, SW-3 and SW702 to ON position.
2. Set the V1 voltage to 11.0V by adjusting the DC power supply.
3. Set the point where the A1 ammeter has started swinging to zero by turning the VR72 counterclockwise.
4. Confirm the operating voltage (11.0V) of ADP circuit by rising the DC power supply voltage and dropping it.

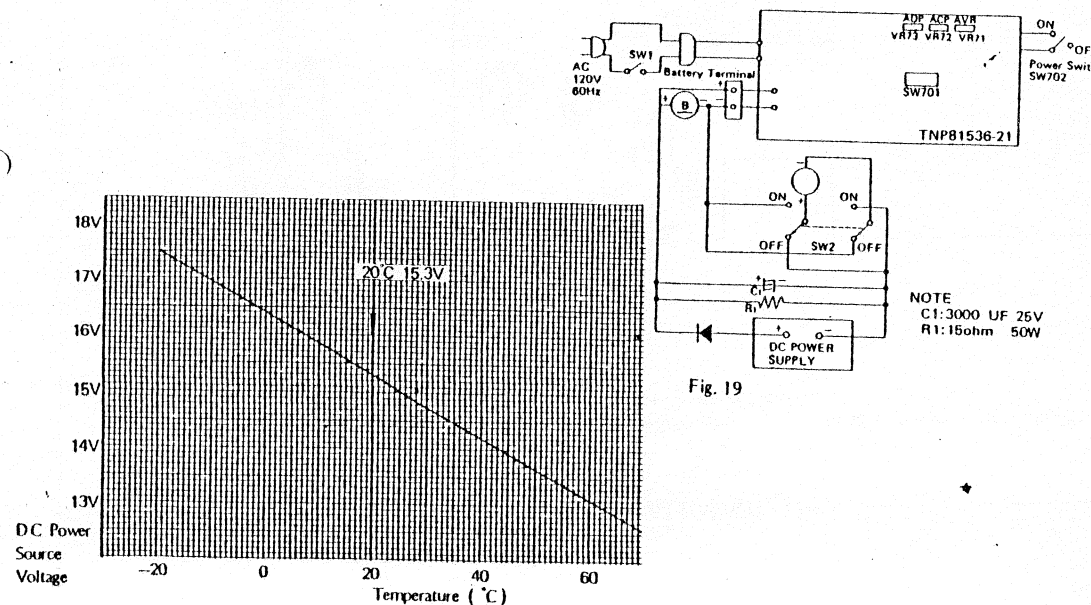


Fig. 20

NEW CIRCUIT EXPLANATION

VIDEO I-F AMPLIFIER & AGC CIRCUIT (IC11 μ PC595C)

- (1) The tuner output is coupled through input filter to terminal pin No.1 of IC 11.
- (2) In the IC, the output from the input filter is amplified through the first amplifier stage and is then coupled to the gain control circuit, the output of which is further amplified and supplied to the succeeding stage filter.
- (3) Meanwhile, control signal from the I-F AGC amplifier is coupled to the gain control circuit; this control signal controls the gain of the video amplifier to stabilize the video amplifier output, that is, detection output.
- (4) The output of the I-F AGC amplifier is also coupled to the R-F AGC amplifier for comparison with a reference voltage VREF2 applied to IC terminal pin No. 13. The R-F AGC amplifier has a delayed AGC function and supplies AGC bias from terminal pin No. 12 of IC to the VHF tuner.
- (5) The gate circuit operates as keyed AGC. The detection output is coupled to IC terminal pin No.6, reference voltage VREF1 to terminal pin No.10, and keying pulse signal to terminal pin No.5, these signals being related as shown in Fig.21. The output of the gate circuit is provided only during the presence of a keying pulse, and its level according to the level of the detection output, as shown in Figs. 21-A and B, the level is reduced with decreasing detection output.
- (6) The gate circuit output is rectified through diode within the IC and filter connected to IC pin No.9, and the rectified output is applied to the I-F AGC amplifier. The amplified voltage output from the I-F AGC amplifier is applied to the gain control circuit for controlling the gain of the I-F amplifier.
- (7) Since the I-F signal from the input filter is amplified before it is coupled to the gain control, application of AGC voltage will not result in variation of the picture quality.

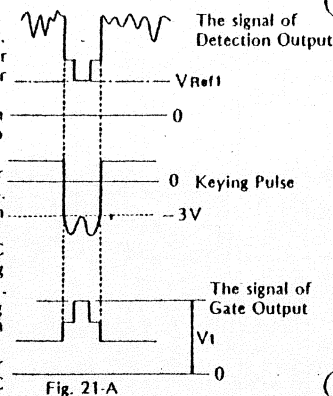
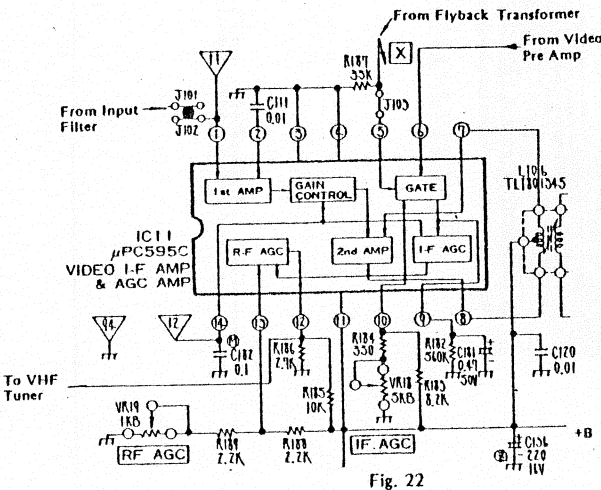


Fig. 21-A



MAIN CIRCUIT BOARD

CONDUCTOR VIEW (TNP81829-21)

IC51	1.	4.3V	9.	11.38
	2.	4.3V	10.	4.3V
	3.	4.1V	11.	7.0V
	4.	2.5V	12.	0V
	5.	0	13.	7.6V
	6.	7.8V	14.	10.5V
	7.	4.6V	15.	2.1V
	8.	4.8V	16.	2.1V

TR16	C.	2.9V
	B.	10.8V
	E.	11.1V

IC11	1.	3.4V	8.	10.6V
	2.	3.4V	9.	6.4V
	3.	0	10.	2.6V
	4.	0	11.	10.7V
	5.	2.2V	12.	4.4V
	6.	3.3V	13.	5.8V
	7.	10.6V	14.	5.2V

TR44	C.	11.5V
	B.	0.01V
	E.	0.1V

TR42	C.	9.1V
	B.	-0.5V
	E.	1.0V

TR43	C.	9.9V
	B.	0.32V
	E.	0

TR15	C.	52.5V
	B.	8.2V
	E.	8.1V

IC12	1.	3.8V	5.	11.0V
	2.	5.1V	6.	11.0V
	3.	5.1V	7.	3.1V
	4.	3.4V	8.	0

TR34	C.	12.5V
	B.	6.2V
	E.	5.6V

TR35	C.	0
	B.	4.8V
	E.	5.5V

TR33	C.	4.9V
	B.	0.72V
	E.	0.05V

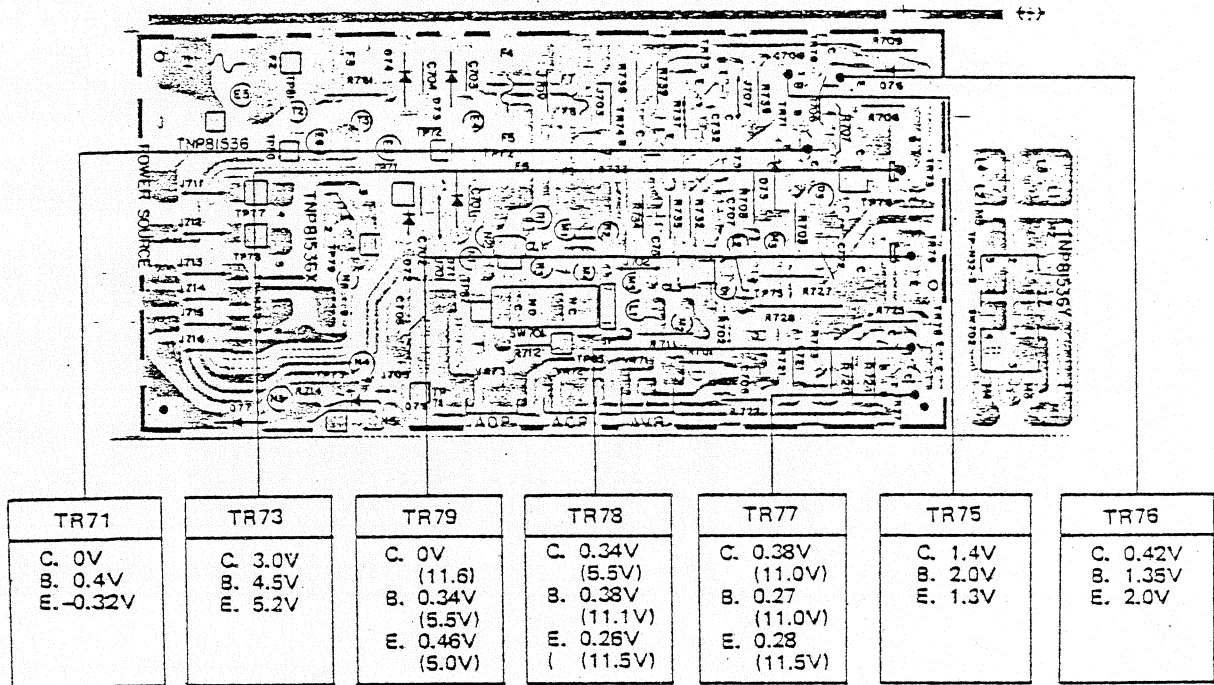
TR32	C.	0.72V
	B.	5.0V
	E.	5.4V

TR31	C.	0.57V
	B.	-0.12V
	E.	0.01V

NOTE. Number in red indicates waveform pattern number on schematic diagram.

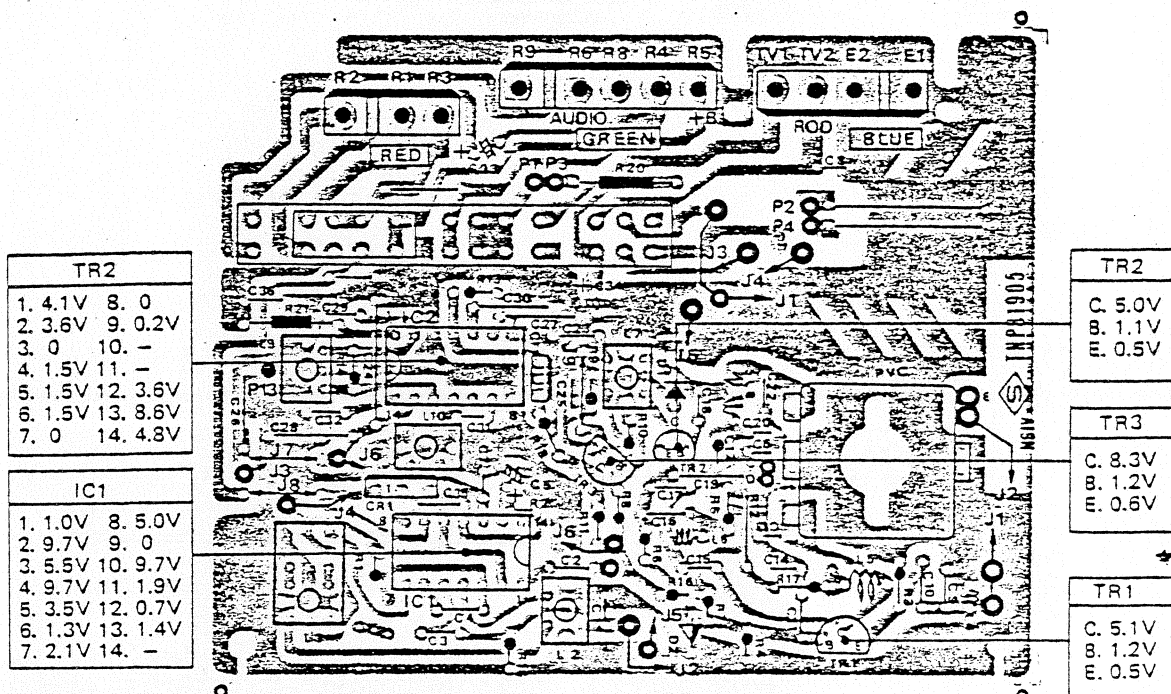
CIRCUIT BOARD

POWER SOURCE CIRCUIT BOARD CONDUCTOR VIEW (TNP81536-21S)

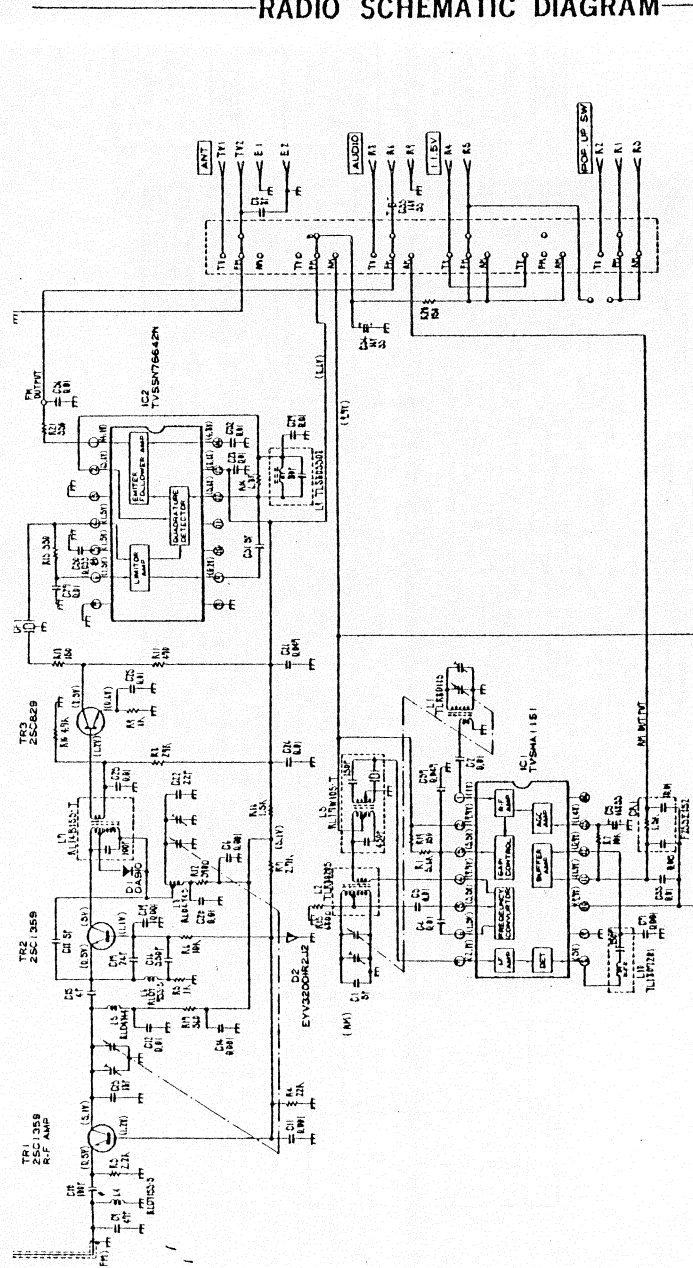


NOTE. The voltage in parenthesis is measured, when the power switch is set to "off" position.

-RADIO CIRCUIT BOARD CONDUCTOR VIEW (TNQ8215)

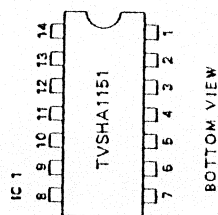
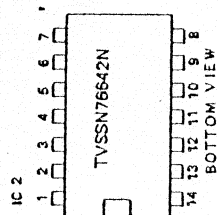
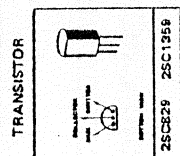


RADIO SCHEMATIC DIAGRAM



NOTE:
1. IC1: TVSHA1151
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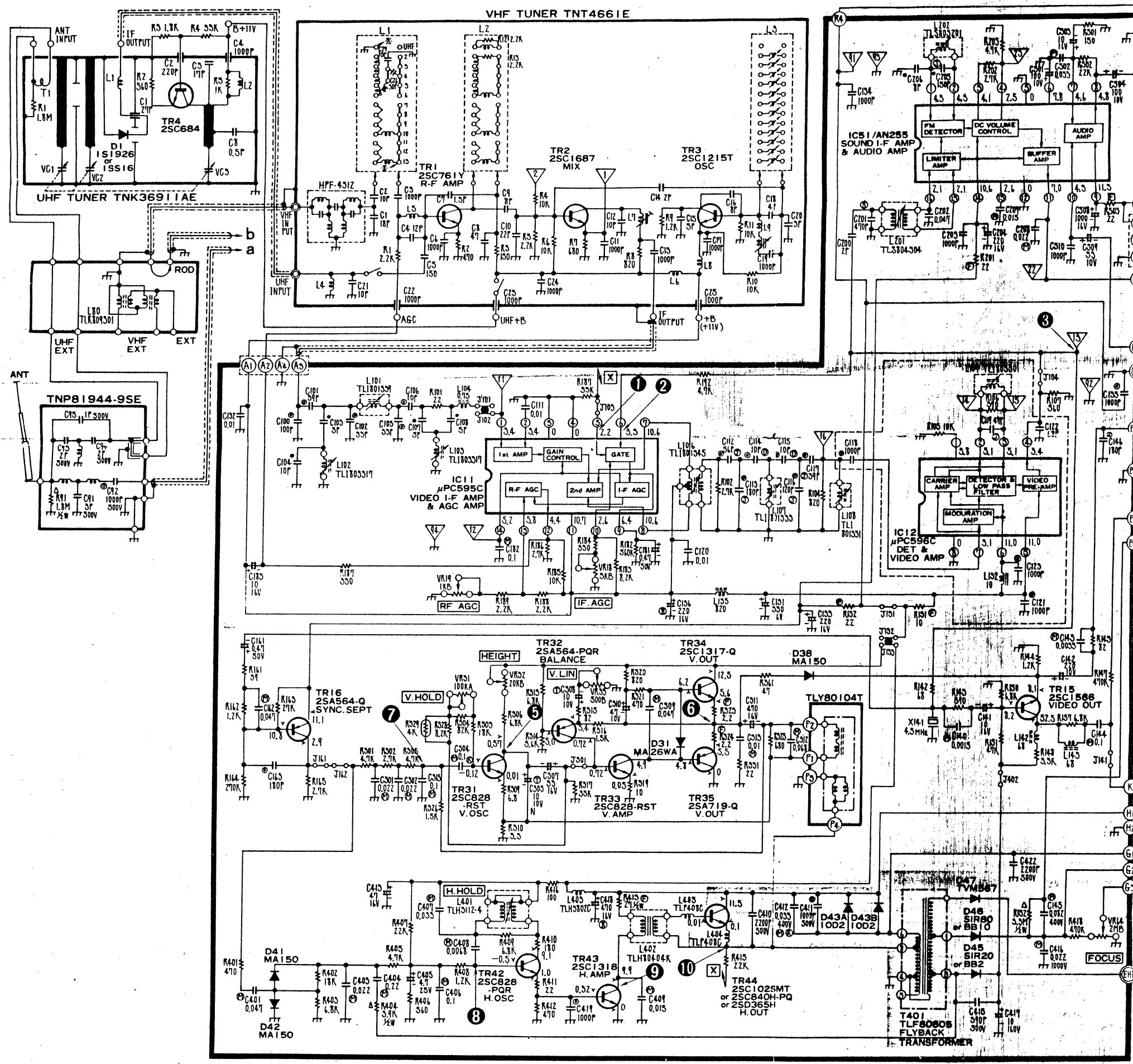


REF. NO.	PARTS NO.	PARTS NAME & DESCRIPTION	REF. NO.	PARTS NO.	PARTS NAME & DESCRIPTION
TNQ8215 RADIO BOARD					
A'SSY PARTS					
R-1	TKK800372	Dial Film Complete	C1	ECCD1H050CC	Ceramic 4PF +0.25PF-0.25PF 50V
R-2	TSE80305	Selector Switch	C2	ECCD1H103PF	Ceramic 0.01UF +100%-0% 50V
R-3	RDT9056A	Tuning Shaft	C3	ECCD1H103PF	Ceramic 0.01UF +100%-0% 50V
R-4	RME11D	Tuning Shaft Stopper	C4	ECCD1H103PF	Ceramic 0.01UF +100%-0% 50V
R-5	RDD310A	Poly Variable Capacitor Drum	C5	ECEA16V33L	Electrolytic 33UF 16V
R-6	RDS4060A	Thread Spring	C6	ECKD1H102KB	Ceramic 1000PF +10%-10% 50V
R-7	RDR13	Guide Roller	C7	ECKD1H102KB	Ceramic 1000PF +10%-10% 50V
R-8	RDR14	Guide Roller	C8	ECKD1H080KB	Ceramic 8PF +10%-10% 50V
R-9	RDR21	Guide Roller	C9	ECCD1H1470KC	Ceramic 47PF +10%-10% 50V
R-10	RDY31A	Roller Stay	C10	ECCD1H101K	Ceramic 100PF +10%-10% 50V
R-11	RNW230A	Roller Stopper	C11	ECCD1H102KB	Ceramic 1000PF +10%-10% 50V
R-12	RDF7A	Dial Roller	C12	ECCD1H102KB	Ceramic 1000PF +10%-10% 50V
R-13	RUS108A	Spread Spring	C13	ECCD1H181JC	Ceramic 180PF +5%-5% 50V
R-14	RD507-4	Rope	C14	ECCD1H102KB	Ceramic 1000PF +10%-10% 50V
R-15	PVC2LX20T-3M	Poly Variable Capacitor	C15	ECCD1H040C	Ceramic 4PF +0.25PF-0.25PF 50V
ICS					
IC1	TVSHA1151	AM Radio	C16	ECKD1H331KB	Ceramic 330PF +10%-10% 500V
IC2	TVSSN76642N	Limiter, FM Det.	C17	ECCD1H240JC	Ceramic 24PF +5%-5% 50V
TRANSISTORS					
TR1	2SC1359A	RF	C18	ECCD1H050CC	Ceramic 5PF +0.25PF-0.25PF 30V
TR2	2SC1359A	Converter	C19	ECCD1H102KB	Ceramic 1000PF +10%-10% 50V
TR3	2SC829B	Sound I-F	C20	ECKD1H1032F	Ceramic 0.01UF +80%-20% 50V
DIODES					
D1	OA90	Limiter	C22	ECCD1H240JC	Ceramic 24PF +5%-5% 50V
D2	EYV320D1R21A	Voltage Stabilizer	C23	ECCD1H103PF	Ceramic 0.01UF +100%-0% 50V
COILS & TRANSFORMERS					
L1	TLR80113	AM Antenna Coil	C24	ECCD1H103KB	Ceramic 0.01UF +10%-10% 50V
L2	TLR80205	AM OSC Coil	C25	ECCD1H103PF	Ceramic 0.01UF +100%-0% 50V
L3	RL17W105Q-T	455KHz Combination Filter	C26	ECCD1H4732F	Ceramic 0.047UF +80%-20% 50V
L4	RLQY155-5	FM Peak Coil	C27	ECCD1H103KB	Ceramic 0.01UF +10%-10% 50V
L5	RDL4Y44	FM R-F Coil	C28	ECCD1H103KB	Ceramic 0.01UF +10%-10% 50V
L6	RLQY755-5	FM Peak Coil	C29	ECCD1H103PF	Ceramic 0.01UF +100%-0% 50V
L7	RL14B153-T	FM I-F Trans.	C30	ECQM05333MZ	Polyester 0.033UF +20%-20% 50V
L8	RL04Y43	FM OSC Coil	C31	ECCD1H150JC	Ceramic 15PF +5%-5% 50V
L9	TL5803308	FM I-F Trans	C32	ECCD1H103PF	Ceramic 0.01UF +100%-0% 50V
L10	TL1807201	AM I-F Trans	C33	ECEA16V33L	Electrolytic 33UF 16V
RESISTORS					
R1	ERD14VJ562	Carbon 5.6KOhm +5%-5% 1/4W	C34	ECEA16V33L	Electrolytic 33UF 16V
R2	ERD14VJ103	Carbon 10KOhm +5%-5% 1/4W	C35	ECKD1H103KB	Ceramic 0.01UF +10%-10% 50V
R3	ERD14VJ222	Carbon 2.2KOhm +5%-5% 1/4W	C36	ECCD1H103PF	Ceramic 0.01UF +10%-10% 50V
R4	ERD14VJ223	Carbon 22KOhm +5%-5% 1/4W	C37	ECKD1H4732F	Ceramic 0.047UF +80%-20% 50V
R5	ERD14VJ102	Carbon 1KOhm +5%-5% 1/4W	C-R COMBINATION		
R6	ERD14VJ103	Carbon 10KOhm +5%-5% 1/4W	CR1	EXAF2532152	Combination Resistor 10.7 Filter
R7	ERD14VJ272	Carbon 2.7KOhm +5%-5% 1/4W	CF1	TFC410R7A	10.7 Filter
R8	ERD14VJ273	Carbon 27KOhm +5%-5% 1/4W	BRACKETS		
R9	ERD14VJ102	Carbon 1KOhm +5%-5% 1/4W	R-16	TKK809816	Radio Complete Mounting Bracket
R10	ERD14VJ472	Carbon 4.7KOhm +5%-5% 1/4W	R-17	TKK809827	Slide Switch Mounting Bracket
R11	ERD14VJ471	Carbon 470Ohm +5%-5% 1/4W	R-18	TUC80927	Shield Plate
R12	ERD14VJ391	Carbon 390Ohm +5%-5% 1/4W	TNP81829-21 MAIN CIRCUIT BOARD		
R13	ERD14VJ331	Carbon 330Ohm +5%-5% 1/4W	IC		
R14	ERD14VJ682	Carbon 6.8KOhm +5%-5% 1/4W	IC11	TVSMPC595C	Video I-F
R15	ERD14VJ681	Carbon 680Ohm +5%-5% 1/4W	IC12	TVSMPC596C	Video Detector
R16	ERD14VJ152	Carbon 1.5KOhm +5%-5% 1/4W	IC31	AN255	Sound I-F
R17	ERD14VJ561	Carbon 560Ohm +5%-5% 1/4W	TRANSISTORS		
R18	ERD14VJ151	Carbon 150Ohm +5%-5% 1/4W	TR15	2SC1566	Video Output
R19	ERD14TJ151	Carbon 150Ohm +5%-5% 1/4W	TR16	2SA364A	Sync. Sep.
R20	ERD14TJ151	Carbon 150Ohm +5%-5% 1/4W	TR31	2SC828A	Vert. Switching
R21	ERD14TJ331	Carbon 330Ohm +5%-5% 1/4W	TR32	2SA364A	Vert. Stability
			TR33	2SC828A	Vert. Drive
			TR34	2SC1317	Vert. Output
			TR35	2SA719	Vert. Output

REF. NO.	PARTS NO.	PARTS NAME & DESCRIPTION	REF. NO.	PARTS NO.	PARTS NAME & DESCRIPTION	REF. NO.	PARTS NO.	PARTS NAME & DESCRIPTION	REF. NO.	PARTS NO.	PARTS NAME & DESCRIPTION
TR42	25C828A	Horiz. Osc.	C141	ECEA16V10L	Electrolytic 10UF 16V	R131	ERD14FJ100	Carbon 100hm +5%-5% 1/4W	R413	ERD12FJ270	Carbon 270hm +5%-5%
TR43	25C1318	Horiz. Drive	C142	ECEA10V220L	Electrolytic 220UF 10V	R132	ERD14FJ220	Carbon 220hm +5%-5% 1/4W	R415	ERD14TJ223	Carbon 22KOhm +5%-5%
TR44	25C1025MT	Horiz. Output	C143	ECQM05332KZ	Polyester 3300PF +10%-10% 50V	R142	ERD14TJ680	Carbon 680hm +5%-5% 1/4W	R416	ERD14TJ101	Carbon 100hm +5%-5%
DIODES			C144	ECQM05104MZ	Polyester 0.1UF +20%-20% 50V	R143	ERD14TJ391	Carbon 390Ohm +5%-5% 1/4W	R418	ERD14TJ474	Carbon 470KOhm +5%-5%
D31	MA26WA	Vert. Bias	C145	ECQM4823MZ	Polyester 0.082UF +20%-20% 40V	R144	ERD14TJ122	Carbon 1.2KOhm +5%-5% 1/4W	R501	ERD14TJ151	Carbon 150Ohm +5%-5%
D38	MA150	Vert. Blanking	C146	ECDD1H181K	Ceramic 180PF +10%-10% 50V	R145	ERD14TJ820	Carbon 820hm +5%-5% 1/4W	R502	ERD14TJ223	Carbon 22KOhm +5%-5%
D41	MA150	Horiz. AFC	C161	ECEA16V10L	Electrolytic 47UF 16V	R147	ERD14TJ564	Carbon 560KOhm +5%-5% 1/4W	R503	ERD14FJ220	Carbon 220hm +5%-5% 1/4W
D42	MA150	Horiz. AFC	C162	ECQM05473MZ	Polyester 0.047UF +20%-20% 50V	R148	ERD14TJ332	Carbon 3.3KOhm +5%-5% 1/4W	R504	ERD14TJ182	Carbon 1.8KOhm +5%-5%
D43A	TVS1002	Damper	C163	ECDD1H181K	Ceramic 180PF +10%-10% 50V	R150	ERD14TJ682	Carbon 6.8KOhm +5%-5% 1/4W	R581	ERD14TJ560	Carbon 560hm +5%-5%
D43B	TVS1002	Damper	C181	ECEA502R47M	Electrolytic 47UF 50V	R151	ERD14TJ473	Carbon 47KOhm +5%-5% 1/4W	R601	ERD14TJ152	Carbon 1.5KOhm +5%-5%
D45	TVSS1R20	Video Rectifier	C182	ECQM0510MZ	Polyester 0.1UF +20%-20% 50V	R152	ERC12GK335	Solid 3.3Mhm +10%-10% 1/4W	R603	ERD14TJ473	Carbon 47KOhm +5%-5%
D46	TVSS1R80	Focus Rectifier	C183	ECEA16V10L	Electrolytic 10UF 16V	R157	ERD14TJ682	Carbon 6.8KOhm +5%-5% 1/4W	CERAP & CONTROLS		
D47	TVMS67	High Rectifier	C200	ECDD1H1020CC	Ceramic 2PF +0.25PF-0.25PF 50V	R161	ERD14TJ390	Carbon 390hm +5%-5% 1/4W	X141	EFCA4R5M2	Cerap 4.5MHZ
COILS			C201	ECQS1471K	Styrol 470PF +10%-10% 100V	R162	ERD14TJ122	Carbon 1.2KOhm +5%-5% 1/4W	VR18	EVLS3AA00B53	I-F AGC
L101	TL1801339	Video I-F Coil	C202	ECKD1H473Z	Ceramic 0.047UF +80%-20% 50V	R163	ERD14TJ273	Carbon 27KOhm +5%-5% 1/4W	VR19	EVLS3AA00B13	R-F AGC
L102	TL1803317	Self Sound Trap	C203	ECKD1H102MB	Ceramic 1000PF +20%-20% 50V	R164	ERD14TJ274	Carbon 270KOhm +5%-5% 1/4W	VR31	EVD66A25KA15	Vert. Hold
L103	TL1803317	Adjustment Sound Trap	C204	ECEA16V220L	Electrolytic 220UF 16V	R165	ERD14TJ272	Carbon 2.7KOhm +5%-5% 1/4W	VR32	EVLS0AA00B24	Height
L104	TL1803317	Fixed Input Coil	C205	ECDD1H151J	Ceramic 150PF +5%-5% 50V	R181	ERD14TJ333	Carbon 33KOhm +5%-5% 1/4W	VR33	EVLS0AA00B52	Vert. Lineality
L106	TL1801345	Coupling Coil	C206	ECDD1H080CC	Ceramic 8PF +0.25PF-0.25PF 50V	R182	ERD14TJ564	Carbon 560KOhm +5%-5% 1/4W	VR51	EVVCOAF25U14	Sound Volume
L107	TL1801333	Coupling Coil	C207	ECQM05153MZ	Polyester 0.015UF +20%-20% 50V	R183	ERD14TJ822	Carbon 8.2KOhm +5%-5% 1/4W	VR62	EVVCOAF25I13X	Contrast
L108	TL1801331	Coupling Coil	C208	ECQM05223MZ	Polyester 0.015UF +20%-20% 50V	R184	ERD14TJ331	Carbon 330Ohm +5%-5% 1/4W	VR63	EVVCOAF25B55	Brightness
L109	TL1805301	Video Det. Coil	C301	ECQM05223MZ	Polyester 0.022UF +20%-20% 50V	R185	ERD14TJ102	Carbon 10KOhm +5%-5% 1/4W	VR64	EVT50AA00B26	Focus
L131	TLT821-999	Filter Choke Coil	C302	ECQM05223MZ	Polyester 0.022UF +20%-20% 50V	R186	ERD14TJ173	Carbon 2.7KOhm +5%-5% 1/4W	BRACKET		
L132	TLT100-999	Filter Choke Coil	C304	ECQM05104KZ	Polyester 0.1UF +10%-10% 50V	R187	ERD14TJ331	Carbon 330Ohm +5%-5% 1/4W	T15869070	TJ525640	Earphone Socket
L142	TLT680-999	Peaking Coil	C305	EC5Z10EF10N	Electrolytic 10UF 10V	R188	ERD14TJ222	Carbon 2.2KOhm +5%-5% 1/4W	TUC80519	TUC80520	Picture Tube Socket
L143	TLT680-999	Peaking Coil	C307	ECEA16V33L	Electrolytic 33UF 16V	R189	ERD14TJ222	Carbon 2.2KOhm +5%-5% 1/4W	TUC80520	TUC80520	I-F AGC
L201	TL5804304	Sound I-F Input Coil	C308	EC5Z10EF10N	Electrolytic 10UF 10V	R192	ERD14TJ472	Carbon 4.7KOhm +5%-5% 1/4W	TUC80709	TWH883440	Video I-F Shield Board
L202	TL5803201	Sound Det. Coil	C309	ECQM05473MZ	Polyester 0.047UF +20%-20% 50V	R201	ERD14FJ220	Carbon 220hm +5%-5% 1/4W	TNP81536-215 POWER CIRCUIT BOARD		
L401	TLH3112-4	Horiz. Hold	C310	ECEA10V47LE	Electrolytic 47UF 10V	R202	ERD14FJ272	Carbon 2.7KOhm +5%-5% 1/4W	TRANSISTORS		
L401	TLH3112-4	Horiz. Hold	C311	ECEA16V470L	Electrolytic 470UF 16V	R203	ERD14FJ472	Carbon 4.7KOhm +5%-5% 1/4W	TR71	2SA564A	AVR
L401	TLF80R05	Flyback Transformer	C312	ECQM05683MZ	Polyester 0.068UF +20%-20% 50V	R301	ERD14TJ472	Carbon 4.7KOhm +5%-5% 1/4W	TR73	2SD389	AVR
L402	TLH80404K	Horiz. Drive	C313	ECQM05103MZ	Polyester 0.01UF +20%-20% 50V	R302	ERD14TJ272	Carbon 2.7KOhm +5%-5% 1/4W	TR74	2SA564A	ADP
L403	TLH3802C	Filter Choke Coil	C315	ECQM05104MZ	Polyester 0.01UF +20%-20% 50V	R303	ERD14TJ183	Carbon 18KOhm +5%-5% 1/4W	TR75	2SC828A	ADP
L404	TLF408C	Choke Coil	C401	ECQM05473MZ	Polyester 0.047UF +20%-20% 50V	R304	ERD14TJ823	Carbon 82KOhm +5%-5% 1/4W	TR76	2SA564A	AVR & ADP
L405	TLF408C	Choke Coil	C403	ECQM05223MZ	Polyester 0.022UF +20%-20% 50V	R305	ERD14TJ472	Carbon 4.7KOhm +5%-5% 1/4W	TR77	2SA564A	ACP
L601	TLF408C	Choke Coil	C404	ECQM05224MZ	Polyester 0.022UF +20%-20% 50V	R306	ERD14TJ682	Carbon 6.8KOhm +5%-5% 1/4W	TR78	2SA564A	ACP
CAPACITORS			C405	ECEA25V47L7	Electrolytic 4.7UF 25V	R309	ERD14TJ68R	Carbon 6.8Ohm +5%-5% 1/4W	TR79	25C1226A	ACP
C100	ECDD1H101K	Ceramic 100PF +10%-10% 50V	C406	ECQM05104MZ	Polyester 0.1UF +20%-20% 50V	R310	ERD14TJ3R3	Carbon 3.3Ohm +5%-5% 1/4W	DIODES		
C101	ECDD1H1390K	Ceramic 39PF +10%-10% 50V	C407	ECQM05333JZ	Polyester 0.033UF +5%-5% 50V	R313	ERD14TJ682	Carbon 6.8KOhm +5%-5% 1/4W	D71	TVS1001	Power Rectifier
C102	ECDD1H1330K	Ceramic 33PF +10%-10% 50V	C408	ECQM05682KZ	Polyester 6800PF +10%-10% 50V	R314	ERD14TJ562	Carbon 5.6KOhm +5%-5% 1/4W	D72	TVS1001	Power Rectifier
C103	ECDD1H1030K	Ceramic 33PF +10%-10% 50V	C409	ECQM05153MZ	Polyester 0.015UF +20%-20% 50V	R315	ERD14TJ820	Carbon 820hm +5%-5% 1/4W	D73	TVS1001	Power Rectifier
C104	ECDD1H1000	Ceramic 10PF +0.5PF-0.5PF 50V	C410	ECKD2H222MD	Ceramic 2200PF +20%-20% 500V	R316	ERD14TJ152	Carbon 1.5KOhm +5%-5% 1/4W	D74	TVS1001	Power Rectifier
C105	ECDD1H330K	Ceramic 33PF +10%-10% 50V	C411	ECKD2H102MB	Ceramic 1000PF +20%-20% 500V	R317	ERD14TJ333	Carbon 33KOhm +5%-5% 1/4W	D75	TVSEQA01-05T	Zener
C106	ECDD1H1000	Ceramic 10PF +0.5PF-0.5PF 50V	C412	ECQM4333KZ	Polyester 0.033UF +10%-10% 40V	R319	ERD14TJ100	Carbon 100hm +5%-5% 1/4W	D76	MA150	AVR Start
C107	ECDD1H050CC	Ceramic 5PF +0.25PF-0.25PF 50V	C413	ECEA16V47L	Electrolytic 47UF 16V	R320	ERD14TJ821	Carbon 820Ohm +5%-5% 1/4W	D77	TVS1001	Opposite Connection Protector
C108	ECDD1H050CC	Ceramic 5PF +0.25PF-0.25PF 50V	C415	ECKD2H391KB	Ceramic 390PF +10%-10% 500V	R321	ERD14TJ471	Carbon 470Ohm +5%-5% 1/4W	D78	TVS1001	Opposite Connection Protector
C111	ECKW1H103PF	Ceramic 0.01UF +100%-0% 50V	C416	ECQE10223MZ	Polyester 0.022UF +20%-20% 10V	R323	ERD14FJ2R2	Carbon 2.2Ohm +5%-5% 1/4W	CAPACITORS		
C112	ECDD1H1560J	Ceramic 56PF +5%-5% 50V	C417	ECEA160V10	Electrolytic 10UF 160V	R324	ERD14FJ2R2	Carbon 2.2Ohm +5%-5% 1/4W	C701	ECKD2H472PE	Carbon 4700PF +100%-0%
C113	ECDD1H181J	Ceramic 180PF +5%-5% 50V	C418	ECEA162470	Electrolytic 470UF 16V	R325	ERD14TJ821	Carbon 820Ohm +5%-5% 1/4W	C702	ECKD2H472PE	Carbon 4700PF +100%-0%
C114	ECDD1H1000	Ceramic 10PF +0.5PF-0.5PF 50V	C419	ECKD1H102MB	Ceramic 1000PF +20%-20% 50V	R326	ERD14TJ152	Carbon 1.5KOhm +5%-5% 1/4W	C703	ECKD2H472PE	Carbon 4700PF +100%-0%
C115	ECDD1H1000	Ceramic 10PF +0.5PF-0.5PF 50V	C422	ECKD2H222MD	Ceramic 2200PF +20%-20% 500V	R328	ERD14TJ872	Carbon 8.2KOhm +5%-5% 1/4W	C704	ECKD2H472PE	Carbon 4700PF +100%-0%
C116	ECDD1H121J	Ceramic 120PF +5%-5% 50V	C501	ECEA10V100L	Electrolytic 100UF 10V	R329	ERTD32H14025	Thermistor 4KOhm 1W	C705	ECET35R2200S	Electrolytic 2200UF
C117	ECDD1H390J	Ceramic 39PF +5%-5% 50V	C502	ECQM05333MZ	Polyester 0.033UF +20%-20% 50V	R331	ERD14TJ220	Carbon 220hm +5%-5% 1/4W	C706	ECEA10V33L	Electrolytic 33UF
C118	ECKD1H102MB	Ceramic 1000PF +20%-20% 50V	C503	ECEA16V10L	Electrolytic 10UF 16V	R360	ERD14TJ470	Carbon 470hm +5%-5% 1/4W	C707	ECEA10V100L	Electrolytic 100UF
C119	ECDD1H470J	Ceramic 47PF +5%-5% 50V	C504	ECEA10V100L	Electrolytic 100UF 10V	R401	ERD14TJ47	Carbon 4700hm +5%-5% 1/4W	C708	ECEA25V10L	Electrolytic 10UF
C120	ECKW1H103PF	Ceramic 0.01UF +100%-0% 50V	C508	ECEA16V1000E	Electrolytic 1000UF 16V	R402	ERD14TJ183	Carbon 18KOhm +5%-5% 1/4W	C721	ECQM05472MZ	Polyester 4700PF +20%-20%
C121	ECKD1H102MB	Ceramic 1000PF +20%-20% 50V	C509	ECEA10V33L	Electrolytic 33UF 10V	R403	ERD14TJ682	Carbon 6.8KOhm +5%-5% 1/4W	C722	ECKD2H681K	Ceramic 680PF +100%-10%
C122	ECDD1H680K	Ceramic 68PF +10%-10% 50V	C510	ECKD1H102MB	Ceramic 1000PF 50V	R404	ERC12GK392	Solid 3.9KOhm +10%-10% 1/4W	C731	ECQM05103MZ	Polyester 0.01UF +20%-20%
C123	ECKD1H102MB	Ceramic 1000PF +20%-20% 50V	RESISTORS			R405	ERD14TJ472	Carbon 4.7KOhm +5%-5% 1/4W	C732	ECEA25V47	Electrolytic 4.7UF
C131	ECEA16V330L	Electrolytic 330UF 16V	R101	ERD14TJ220	Carbon 200hm +5%-5% 1/4W	R406	ERD14TJ561	Carbon 560Ohm +5%-5% 1/4W	R407	ERD14TJ223	Carbon 22KOhm +5%-5% 1/4W
C132	ECKW1H103PF	Ceramic 0.01UF +100%-0% 50V	R102	ERD14TJ272	Carbon 2.7KOhm +5%-5% 1/4W	R408	ERD14TJ122	Carbon 1.2KOhm +5%-5% 1/4W	R409	ERD14TJ682	Carbon 6.8KOhm +5%-5% 1/4W
C133	ECEA16V220L	Electrolytic 220UF 16V	R104	ERD14TJ821	Carbon 820Ohm +5%-5% 1/4W	R410	ERD14TJ181	Carbon 180Ohm +5%-5% 1/4W	R411	ERD14TJ220	Carbon 220hm +5%-5% 1/4W
C134	ECKD1H102MB	Ceramic 1000PF +20%-20% 50V	R105	ERD14TJ103	Carbon 10KOhm +5%-5% 1/4W	R412	ERD14TJ471	Carbon 4700hm +5%-5% 1/4W			
C135	ECKD1H102MB	Ceramic 1000PF +20%-20% 50V	R106	ERD14TJ391	Carbon 390Ohm +5%-5% 1/4W						
C136	ECEA16Z220E	Electrolytic 220UF 16V									
C140	ECQM05152KZ	Polyester 1500PF +10%-10% 50V									

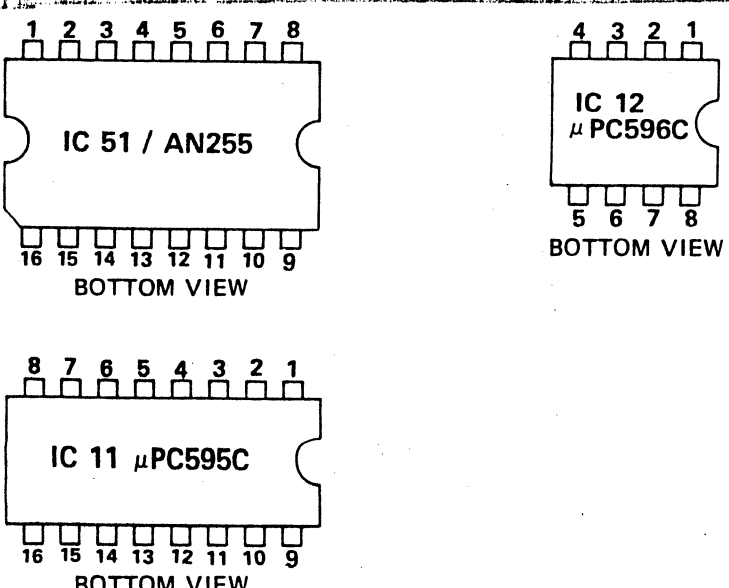
REF. NO.	PARTS NO.	PARTS NAME & DESCRIPTION	REF. NO.	PARTS NO.	PARTS NAME & DESCRIPTION
RESISTORS			R735	ERD14TJ682	Carbon 6.8KOhm +5%—5% ¼W
01	ERD14TJ122	Carbon 1.2KOhm +5%—5% ¼W	R736	ERD14TJ103	Carbon 10KOhm +5%—5% ¼W
02	ERD14TJ821	Carbon 820Ohm +5%—5% ¼W	R737	ERD14TJ472	Carbon 4.7KOhm +5%—5% ¼W
03	ERD14TJ151	Carbon 150Ohm +5%—5% ¼W	R738	ERD14TJ123	Carbon 12KOhm +5%—5% ¼W
05	ERC12GK39T	Solid 390Ohm +10%—10% ¼W	R739	ERD14TJ102	Carbon 1KOhm +5%—5% ¼W
07	ERD14TJ221	Carbon 220Ohm +5%—5% ¼W	R741	ERC12ZGK185	Solid 1.8MOhm +10%—10% ¼W
08	ERD14TJ153	Carbon 15KOhm +5%—5% ¼W	VR71	EVLS0AA00B23	AVR
11	ERM12PKR47	Resin Coated 0.47Ohm ¼W	VR72	EVLS0AA00B14	ACP
12	ERD12FJ220	Carbon 220Ohm +5%—5% ¼W	VR73	EVLS0AA00B53	ADP
14	ERD12TJ681	Carbon 680Ohm +5%—5% ¼W	FUSES		
21	ERD14TJ222	Carbon 2.2KOhm +5%—5% ¼W	111	XBA2F04NU100	AC 0.4A Fuse
22	ERD14TJ433	Carbon 43KOhm +5%—5% ¼W	112	XBA2F10NU100	DC 1A Fuse
23	ERD14TJ273	Carbon 22KOhm +5%—5% ¼W	113	XBA-TET6NU100	DC 1.6A Fuse
24	ERD14TJ562	Carbon 5.6KOhm +5%—5% ¼W	SOCKET & SWITCHES		
25	ERD14TJ100	Carbon 10Ohm +5%—5% ¼W	114	TJS869080	AC/DC Socket
26	ERD14TJ103	Carbon 10KOhm +5%—5% ¼W	115	TSE80606	Pop up Switch
27	ERD12TJ201	Carbon 200Ohm +5%—5% ¼W	116	TSE80704	Power Switch
28	TRF2SK1R0	Non Flame 1Ohm 2W	BRACKET & SCREWS		
31	ERTD2FHL332	Thermistor 3.3KOhm 2W	117	TUC80709	Heat Sink
32	ERD14TJ332	Carbon 3.3KOhm +5%—5% ¼W		XTV3+88	TR73, Mounting Screw
33	ERD14TJ223	Carbon 22KOhm +5%—5% ¼W		XSB3+10S	TR79, Mounting Screw
34	ERD14TJ123	Carbon 12KOhm +5%—5% ¼W		XNG38S	TR79, Mounting Nut
				XWA38	TR79, Mounting Washer

SCHEMATIC DIAGRAM FOR MODE



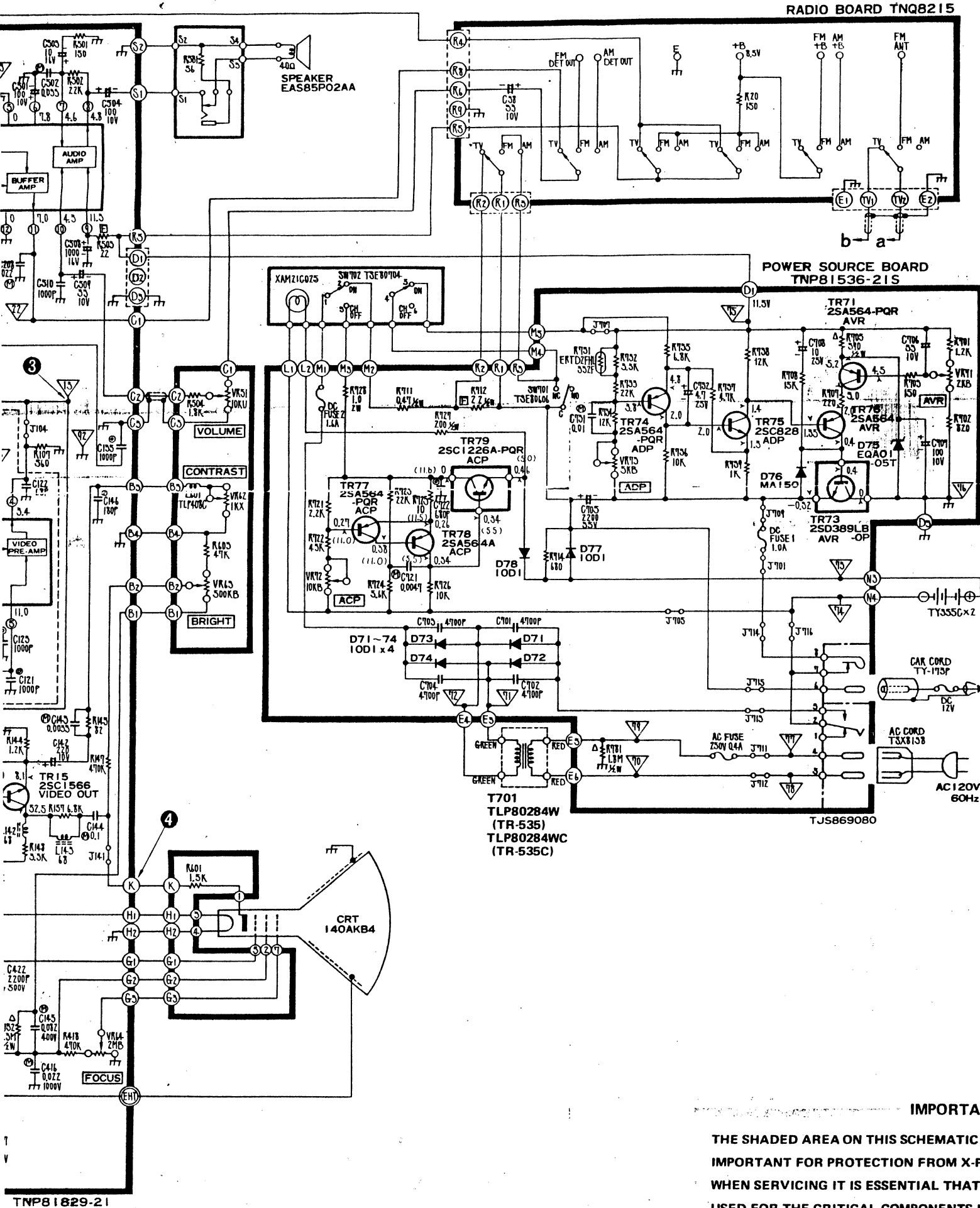
IC TERMINAL INFORMATION

TRANSISTOR BASE INFORMATION

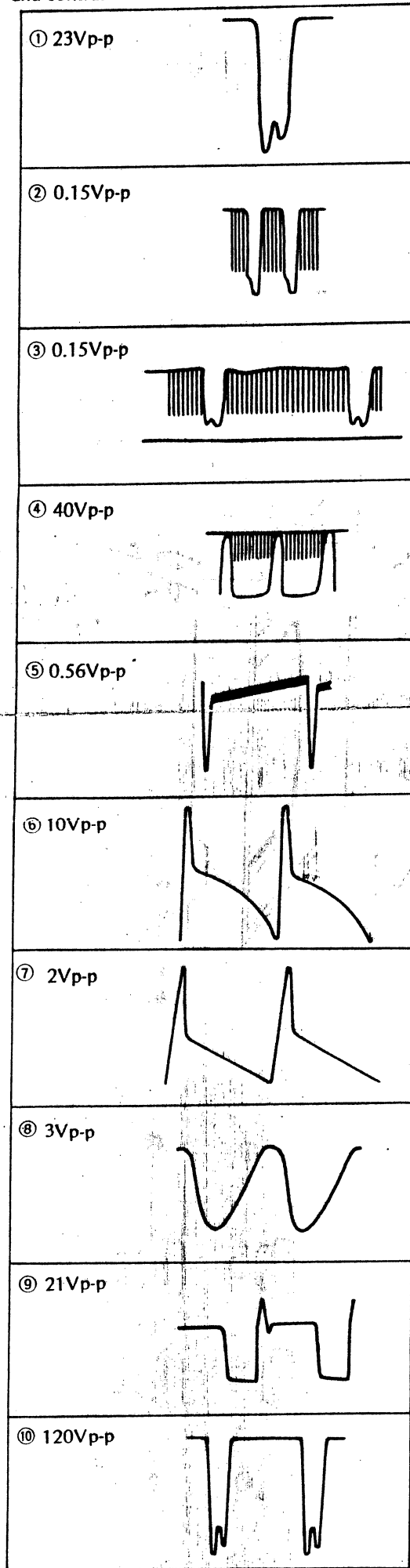


LOCATION			
PARTS NAME	2SC717	2SC683	2SC1025MT
COLLECTOR			
BASE			
EMITTER			
2SA664A	2SA719	2SC1226A	2SC1566
2SC564A	2SC828A		
2SC1317	2SC1318		2SD389

R MODELS TR-535 & TR-535C



These waveforms were taken with normal signal. The peak-to-peak voltage were taken with brightness and contrast controls set for maximum position.



IMPORTANT SAFETY NOTICE

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS ON THE SCHEMATIC.

NOTE

1. RESISTOR

All resistors are carbon 1/4W resistor, unless otherwise noted the following marks. Unit of resistance is OHM (Ω). (K=1,000, M=1,000,000)

- Δ : Solid resistor
- \square : Wire wound resistor
- $\text{---}\text{---}\text{---}$: Fuse resistor
- \bullet : Metal oxide resistor
- $\text{---}\text{---}\text{---}$: Thermistor

2. CAPACITOR

All capacitors are ceramic 50V capacitor, unless otherwise noted the following marks. Unit of capacitance is μF , unless otherwise noted.

- $\text{---}\text{---}\text{---}$: Polystyrene capacitor
- $\text{---}\text{---}\text{---}$: Electrolytic capacitor

3. COIL

Unit of inductance is μH .

4. TEST POINT

∇ : Test point position.

5. VOLTAGE MEASUREMENT

Voltage is measured by a volt ohm meter with DC 20K OHM/V receiving normal signal, when all controls are set to the maximum position.

The voltage in parenthesis is measured when the power switch is set to "off" position.

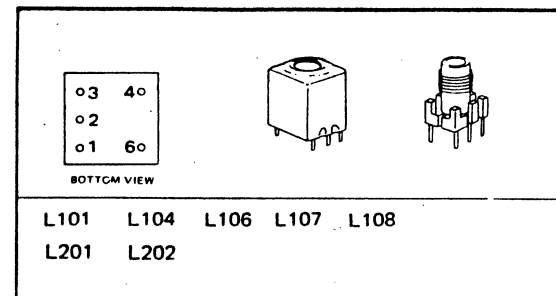
6. Number in red circle indicates waveform number.

7. When arrow mark (\nearrow) is found, connection is easily found along with the direction of an arrow.

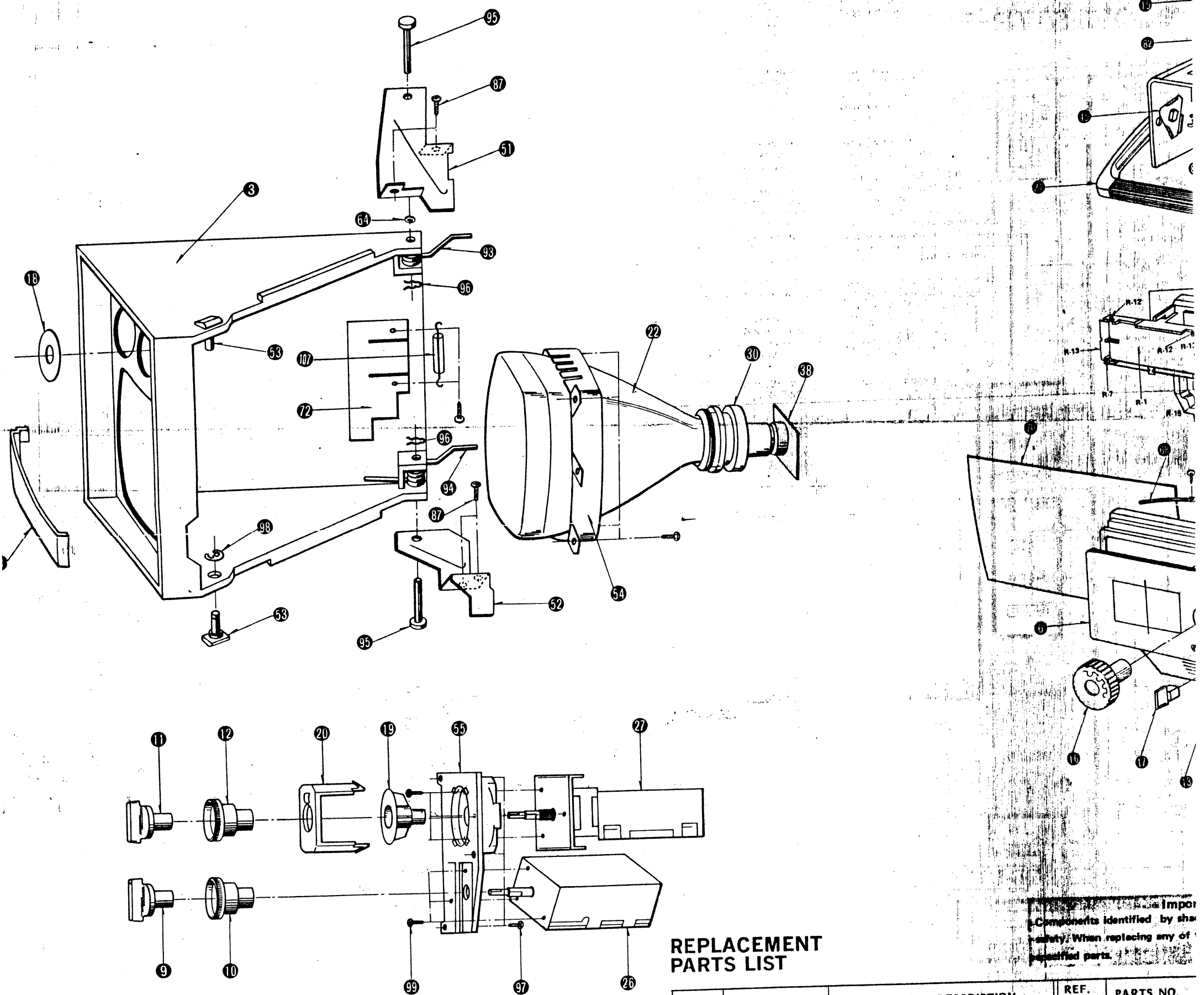
8. When schematic diagram of a board is described in more than two places, they are encircled with dotted line (---).

9. This schematic diagram is the latest at the time of printing and subject to change without notice. (Mar. 1975)

TRANSFORMER TERMINATION INFORMATION



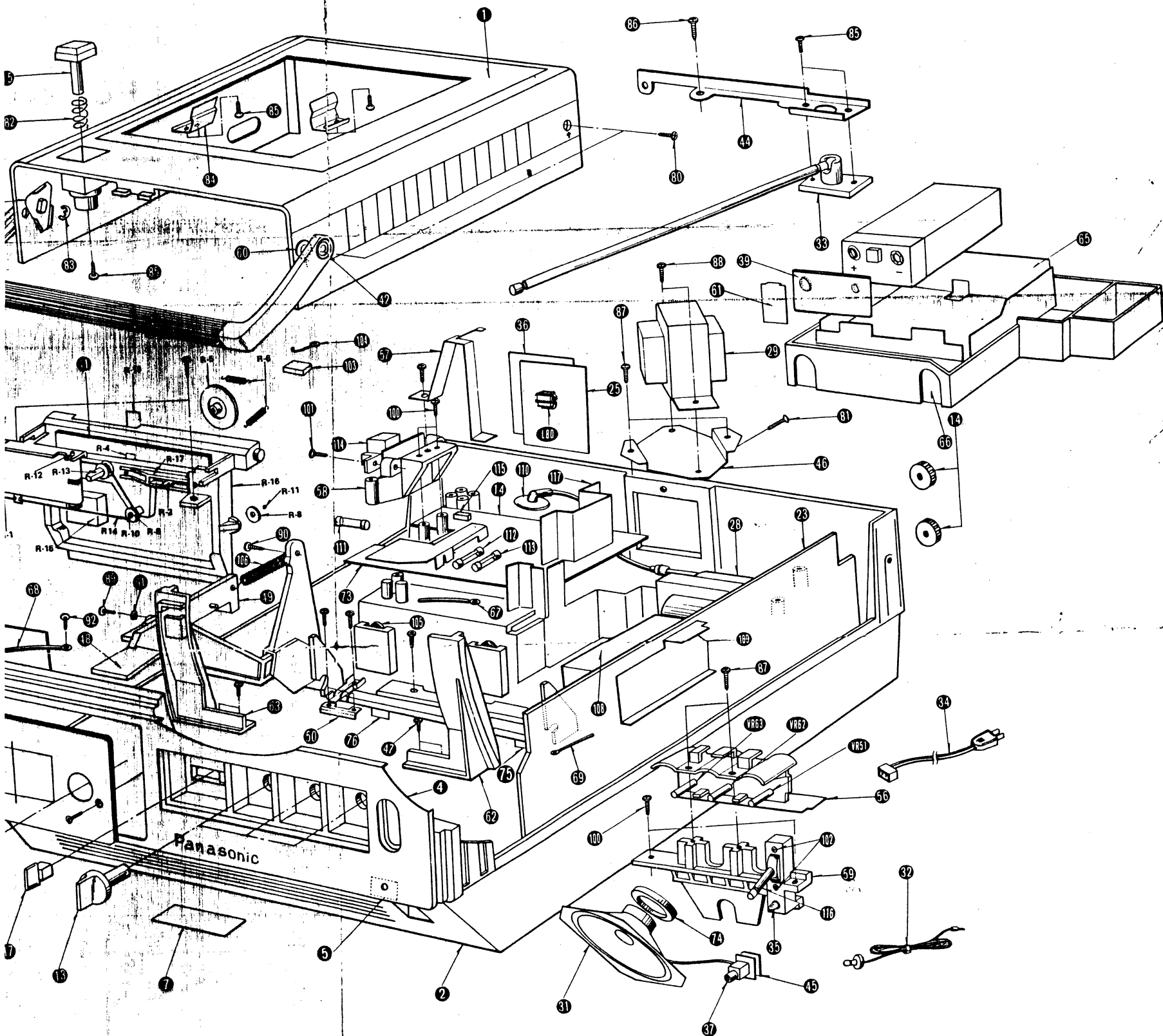
EXPLODED VIEW



REPLACEMENT PARTS LIST

REF. NO.	PARTS NO.	PARTS NAME & DESCRIPTION	REF. NO.	PARTS NO.
CABINET PARTS			30	TLY80104T
1	TKY802301	Upper Cabinet	31	EAS85P02AA
2	TKY802101-1H (TR-535)	Under Cabinet Complete	32	EAE3YDAA
2	TKY802101-2H (TR-535C)	Under Cabinet Complete	33	TSA141-1S
3	TKY802201-1H	Escutcheon Complete	34	TSX8138
4	TKP8052751	Aluminum Panel	35	XAM21C025
5	TKK39317	Lamp Indicator Plate	36	TJB802425
6	TKP8011591-1	Radio Transparent Plate	37	TJS869070
7	TBM82628-1 (TR-535)	Model Plate	38	TJS25640
7	TBM82643 (TR-535C)	Model Plate	39	TLR809316
8	TKG809638	Front Glass	40	TJB80906-1
9	TBX80765	VHF Channel Knob	41	TPC803271
10	TBX80758-1	VHF Fine Tuning	42	TPC803321 (TR-535C)
11	TBX80759	UHF Channel Knob	43	XAPD01535
12	TBX80757-1	UHF Fine Tuning	44	TPE84023
13	TBX80581-1	Small Knob	45	TQB83494
14	TBX80583-1	Vert./Horiz. Knob	46	(TR-535)
15	TKK809810	Pop-up Button	47	TQB83508
16	TBX80582	Radio Tuning Dial Knob	48	(TR-535C)
17	TBX80557-3	Radio-TV Selector Knob	49	TQB82500
18	TKP8010961	VHF Indicator Plate	50	TQD8112069-1
19	TKK800357-4	UHF Indicator Plate	51	(TR-535)
20	TKK800356	UHF Indicator Transparent Plate	52	TQD8111266
21	TKK800226	Handle Complete	53	(TR-535C)
22	140AKB4	Picture Tube	54	TQD8111266
23	TNP81829-21	Main Circuit Board Complete	55	(TR-535C)
24	TNP81536-21	Power Circuit Board Complete	56	TQB32894P
25	TNP81944-1H	U/V Signal Separator Circuit Board Complete	57	TNQ8215
26	TNT4661E	VHF Tuner	BRACKETS	
27	TNK36911AE	UHF Tuner	42	TKK809240
28	TLP80284W	Flyback Transformer	43	TKZ800925Z
29	TLP80284W (TR-535)	Power Transformer	44	TUW80977Z
29	TLP80284WC (TR-535C)	Power Transformer	45	TMK81252

Important: Components identified by shaded background. When replacing any of specified parts.



Important Safety Notice
 ed by shading have special characteristics important for
 ing any of these components use only manufacturer's

TS NO.	PARTS NAME & DESCRIPTION
80104T 85P02AA 3YDAA	Deflection Yoke Speaker Earphone
141-15 8138 121C025 102425 169070	Rod Antenna Power Cord Pilot Lamp Antenna Terminal Board Complete Earphone Socket
15640 809316 10906-1 803271 TR-535) 803321 TR-535C)	Picture Tube Socket Balun Coil Battery Terminal Complete Outer Carton
101535 84023 83494 TR-535) 83508 TR-535C) 82494 TR-535)	Outer Carton Fan Bag Instruction Book
82508 TR-535C) 82500 88112069-8 (TR-535) 8811266 (TR-535C)	Instruction Book Instruction Sheet Fact Tag
332894P	Battery Instruction Book
Q821-	FM/AM Radio Complete
TS	
K809240 Z800925Z 10000000	Handle Mounting Pin Handle Mounting Bracket Antenna Mounting Bracket

REF. NO.	PART NO.	PARTS NAME & DESCRIPTION	REF. NO.	PART NO.	PARTS NAME & DESCRIPTION
46	TUX80284C	Power Transformer Mounting Bracket	85	XTB4+12A	Antenna, Pop-up Button, Pop-up Block
47	TKX804101	Lock Shaft	86	XSB3+85	Stopper Mounting Screw Antenna Terminal Bracket Mounting Screw
48	TKX804201	Lock Shaft Arm	87	XTB4+15A	Power Circuit Board, Volume Block Speaker Pop-up Block Mounting Screw
49	TKX804301	Lock Shaft Arm Mounting Bracket	88	XTB4+8B	Power Transformer Mounting Screw
50	TKZ809916	Lock Shaft Holder	89	XTB4+12A	Lock Shaft Arm Mounting Screw
51	TKZ809914C	Pop-up Block Mounting Bracket. (A)	90	XTV3+6A	Lock Shaft Spring Mounting Screw
52	TKZ809915C	Pop-up Block Mounting Bracket. (B)	91	XWG4	Lock Shaft Arm Mounting Washer
53	TKX804901	Lock Pin	92	XTB4+15A	Radio Mounting Screw
54	TKW80961-4 (TR-535)	Picture Tube Band	93	TES8217	Pop-up Spring (Right)
54	TUW80961-4 (TR-535C)	Picture Tube Band	94	TES8220	Pop-up Spring (Left)
55	TKX803701	Tuner Mounting Bracket	95	TEL8116	Pop-up Block Mounting Shaft
56	TKX804601	Volume Mounting Bracket	96	TES8127	Pop-up Block Holding Pin
57	TES8123	Pop-up Switch Spring	97	XTB4+15A	Tuner Block Mounting Screw
58	TKX804401	Power Cord Socket Holder	98	TES8126	E-Ring
59	TKX804501	Speaker Stopper	99	XTV3+10B	Tuner Mounting Screw
60	TKK809239	Handle Bushing	100	XTB3+12A	Speaker, Pop-up Block Mounting Screw
61	TJC80310	Battery Terminal Plate	101	XTB4+12A	Power Cord Socket Mounting Screw
62	TKX803901	Picture Tube Variator Holder (A)	102	XSB3+65	Power Switch Mounting Screw
63	TKX804001	Picture Tube Variator Holder (B)	103	TJT8504M	4P Coupler
64	TKX804801	Shaft Cover		TJT487	1P Coupler
65	TMK81941-1	Battery Spacer		TJT885	1P Chip
66	TMK81253	Battery Lead Mounting Bracket		TJT8503M	3P Coupler
67	TMK81936	Power Circuit Board Lead Mounting Bracket		TJT8505M	5P Coupler
68	TMK81937	Radio Lead Mounting Bracket		TJT8707M	Coupler Terminal (Slender)
69	TMK81939	Main Circuit Board Lead Mounting Bracket	104	TJT8708M	Coupler Terminal (Thick)
70	TMK81934	Picture Tube Barrier	105	TES8218	Battery Terminal Spring
72	TMK82142-1	Escutcheon Lead Spacer	106	TES8216	Lock Shaft Spring
73	TMK81940	Power Circuit Board Spacer	107	TES8304	Lead Wire Mounting Spring
74	TMM81556	Speaker Mounting Rubber	RESISTOR		
75	TMM81562	Cushion Rubber (A)	R91	ERC12ZGK185	Ceramic 3PF +0.25PF-0.25PF 500V
76	TMM81563	Cushion Rubber (B)	CAPACITORS		
SCREWS, WASHERS & SPRING			C91	ECCD2H030C	Solid 1.8MOhm +10%-10% 1/2W
80	XTB4+15AFC	Upper Cabinet Mounting Screw	C92	ECCD2H102MB	Ceramic 1000PF +20%-20% 500V
81	XSS3+20FNKS	Antenna Terminal Mounting Screw	C93	ECCD2H020C	Ceramic 2PF +0.25PF-0.25PF 500V
82	TES8215	Pop-up Bottom Spring	C94	ECCD2H020C	Ceramic 2PF +0.25PF-0.25PF 500V
83	TES8130	Handle "U" Ring	C95	ECCD2H010C	Ceramic 1PF +0.25PF-0.25PF 500V